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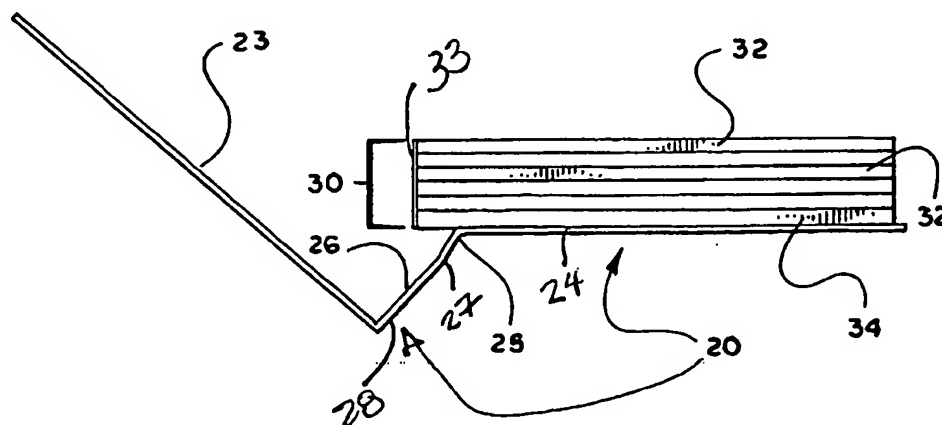
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[Continued on next page]

(54) Title: BOOK-LIKE STACKED ARRAY WITH COVER



(57) **Abstract:** A book-like stacked array having a spine and a cover has a stacked array of planar-like articles having a spine and a cover having a cover spine and a back cover portion hingedly adjoining said cover spine along a first hinge line and attached to an outermost one of said planar-like articles beyond a second hinge line that is offset from said first hinge line such that when said stacked array is placed in open condition tearing away of the back cover portion from said outermost one of said planar-like articles is mitigated.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Book-like Stacked Array with Cover**CROSS-REFERENCE TO RELATED APPLICATIONS**

(N/A)

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**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT**

(N/A)

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BACKGROUND OF THE INVENTION

The invention relates to stacked arrays of article trays, and more particularly to a hinged stacked array of article trays having a cover with offset attachment to the stack.

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Manufactures often desire to package articles that they sell in packages that contain multiples of the article. Often, the package for containing multiples of the article may be used as a permanent storage device for reusable articles.

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Trays are often used as storage mechanisms for disc-shaped articles such as compact discs (CD's), digital versatile discs (DVD's) and similarly shaped disc-like information storage mediums. A useful configuration for packaging multiple disc-shaped articles is a stacked array of trays. In such a stacked array, the trays are often hinged to one another for ease in accessing individual trays while maintaining the ability to easily restack. A cover is frequently applied to the stacked array for informational and aesthetic purposes. The cover may be applied so that the individual trays of the array may be accessed in book-like fashion.

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A problem in using a stacked array of trays with a cover is that when the trays are pivoted from a single stack configuration, stresses are often placed upon the cover that cause the cover to pull away from where it is attached to the trays. This tearing away structurally damages the back portion of the cover and is also undesirable aesthetically. This problem occurs because the trays are rigid and have widths that cannot be fully accommodated by the spine portion of the cover. This problem also arises in other book-like stacked arrays. Thus, it can be appreciated that it

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would be useful to have a means for covering a stacked array of article trays that does not cause the cover to tear away from the region of connection to the trays.

BRIEF SUMMARY OF THE INVENTION

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The present invention provides a stacked array of trays for articles having a cover that is placed around the stack in the manner of a book cover. The cover consists of back and front portions connected by a spine. The width of the spine corresponds to the height of the stack of trays. In a preferred embodiment of the invention, the back portion of the cover is affixed to the back of the bottom, or base, tray. A narrow region on the back cover adjacent the spine is not adhered to the bottom panel. In accordance with a further preferred embodiment, the back panel is two-ply with one ply affixed to the bottom/base tray and the ply adjoining the spine containing the narrow region.

Other advantages and objects of the present invention will be apparent from the following description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an isometric illustration of a stacked array of article trays having a cover with offset attachment region, in accordance with a preferred embodiment of the invention.

Fig. 2 is an illustration of the package of Fig. 1 in upright condition showing the individual trays fanned as in a book.

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Fig. 3 is an illustration of the package of Fig. 1 in upright condition with the front portion of the cover opened, the spine of the cover pivoted away from the stacked array, and the narrow non-adhered region of the back cover pivoted away from the bottom/base tray.

Fig. 4 is an illustration of the package of Fig. 1 in opened condition wherein some of the trays have been pivoted off of the stack, forming two stacks of approximately equal height.

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Fig. 5 is an illustration of the package of Fig. 1 in opened condition wherein substantially all of the trays have been pivoted off of the original stack, leaving only the bottom, or base, tray on the original stack.

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DETAILED DESCRIPTION OF THE INVENTION

Throughout the drawings, the same reference numerals are used to denote the same or like features of the invention.

10 Referring first to Fig. 1, therein is illustrated a package 10 that is a stacked array 30 of trays for articles having a cover 20 in accordance with a preferred embodiment of the invention. Referred now also to Fig. 2, the package 10 of Fig. 1 is shown in upright condition with the individual trays 32 joined along a spine 33 partially fanned like the pages of a book about their region of common joinder that is, the spine 33. In Fig. 2, the elements of the cover 20 can be
15 seen. The cover 20 has a front portion and back portion 24/26 joined by a spine 28. The back portion has one portion, a back cover portion, 24 that is affixed by adherence or other means to the bottom, or base, tray 34 of the array 30 of trays beyond a line of joinder or hinge line 25 that is offset from the line of joinder or hinge line 27 that hingedly adjoins the cover spine 28 to the back cover 24/26. A strip 26 completes the back cover. The strip is shown and noted to be fairly
20 narrow in the preferred embodiment illustrated but the width may vary. The narrower the strip 26, the wider the remainder of the back portion 24 of the cover. The wider the back portion 24 that is adhered to the bottom/base tray, the more firmly affixed is the back portion to the bottom/base tray 34.

25 In the preferred embodiment, the strip 26 is defined by substantially parallel lines of demarcation, such as fold or score lines. One line of demarcation 25 creates a pivot line that separates the main portion back portion of the cover 24 from the strip 26. The second line of demarcation 27 separates the non-affixed strip 26 of the back portion of the cover 20 from the
30 spine 26.

Referring now to Fig. 3, in another view of the package of Fig. 1 shown in upright condition, from a more top isometric view, the manner in which the cover is offset at the back portion by the strip 26. The strip 26 is shown pivoted away from the array 30 of trays along the line of demarcation (fold line) 25 of the back portion of the cover.

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Referring now to Fig. 4, the package of Fig 1 is shown open in the manner of a book with some of the trays 32 pivoted away from the original stack. This illustration demonstrates that package opened to a condition of no more stacks on the open portion than on the original stack where the problem of pressure being exerted against the spine and back portion of the cover has not occurred.

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Referring now to Fig. 5, therein is shown the package of Fig. 1 opened to a condition where the stack of trays 32 that have been pivoted away from the original stack (and therefore the bottom/base tray 34) exceeds the number (and therefore height) of trays in the original stack (base tray stack). The manner in which pressure is exerted by the removed stack against the spine and back portion of the cover is shown. The manner in which relief is provided by the offset of the non-adhered strip 26 is also shown. The relief provided by the offset mitigates tearing or other undesirable effects of pressure.

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Referring now back to Figs 2, 3, 4 and 5, an optional feature of the invention is illustrated wherein the back portion of the cover is two ply with the main back cover portion 24 and its adjoining strip 26 forming the outer ply and a second panel 23 forming an inner ply that is affixed to the bottom/base tray 34. This configuration provides a panel 23 that is affixed to the bottom/base tray at the greatest number of points, the main portion of the back cover region 24 is firmly affixed to the inner ply 23 and the un-adhered strip provides the offset.

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The present invention provides a stacked array of trays for articles having a cover that is placed around the stack in the manner of a book cover. The cover consists of back and front portions connected by a spine. The width of the spine corresponds to the height of the stack

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of trays. The back portion of the cover is affixed to the back of the bottom tray. However, a region of the back cover adjacent the spine is not adhered to the bottom panel.

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Modifications may be made in the foregoing without departing from the scope and spirit of the claimed invention. For example, although the preferred embodiment illustrated and described is directed to trays in particular the invention is equally applicable to stacked arrays of other substantially planar or planar-like articles or elements.

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The figures forming a part of this specification convey the best mode for carrying out the invention known to the inventor at the time of filing the patent application. The figures are further presented to enable those skilled in the art to make and use the invention. After learning of the details of the invention as presented herein, including the figures, it is likely that alternative embodiments could be devised according to the invention, which have a much different appearance than the embodiments disclosed in the accompanying figures. The figures forming a part of the specification convey utilitarian aspects of the invention and the preferred embodiments, and also include ornamental features which are not necessary to the utilization of the invention.

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What is claimed is:

1. A book-like stacked array having a spine and a cover comprising:

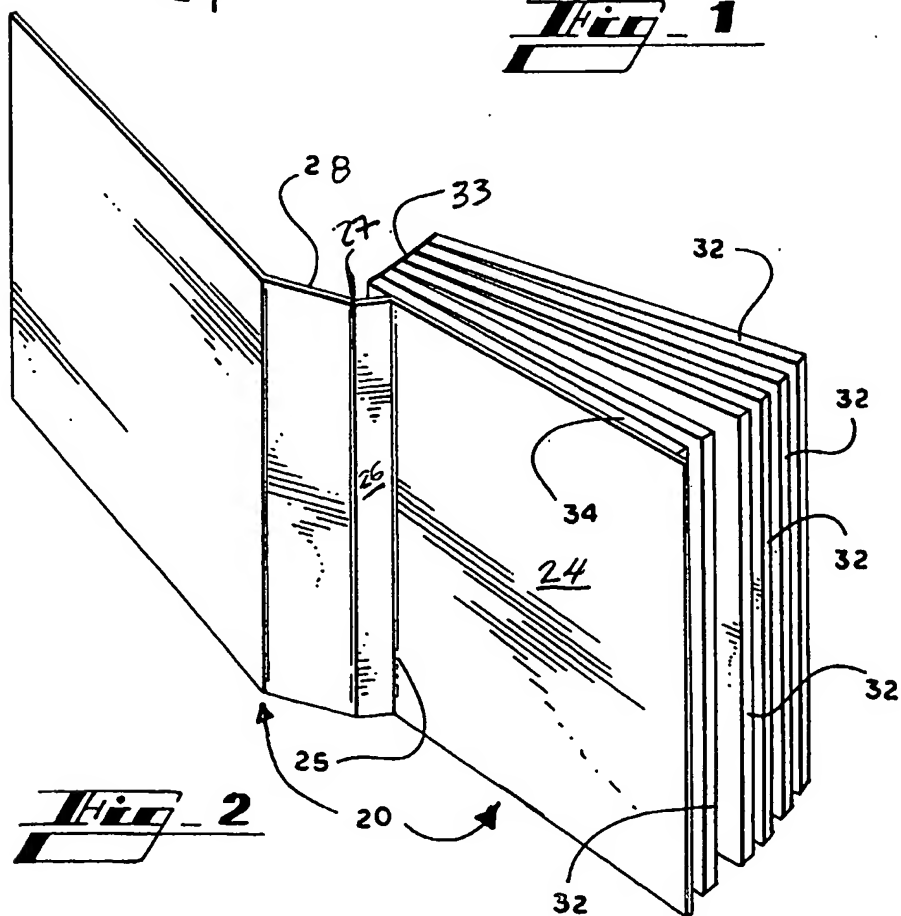
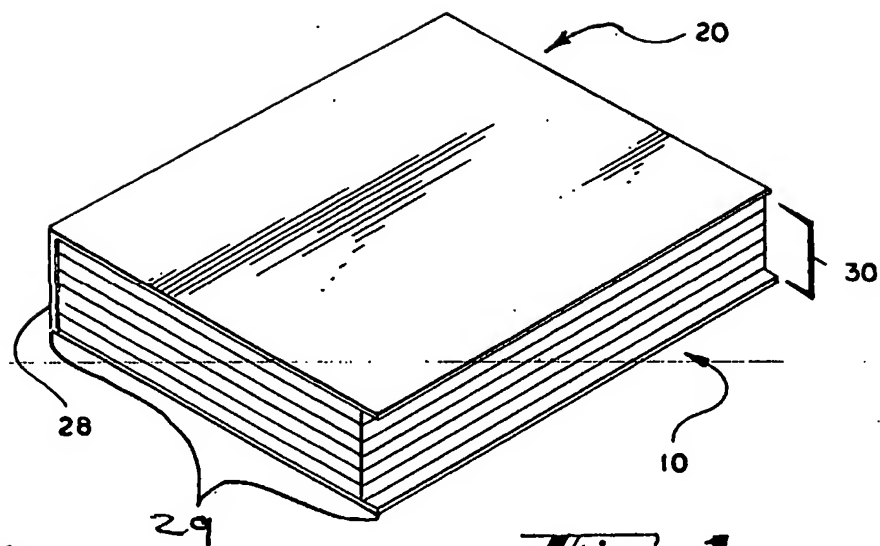
a stacked array of planar-like articles having a spine; and

5 a cover having a cover spine and a back cover portion hingedly adjoining said cover spine along a first hinge line and attached to an outermost one of said planar-like articles beyond a second hinge line that is offset from said first hinge line such that when said stacked array is placed in open condition tearing away of the back cover portion from said outermost one of said planar-like articles is mitigated.

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2. The invention of claim 1, said planar-like articles comprising trays.

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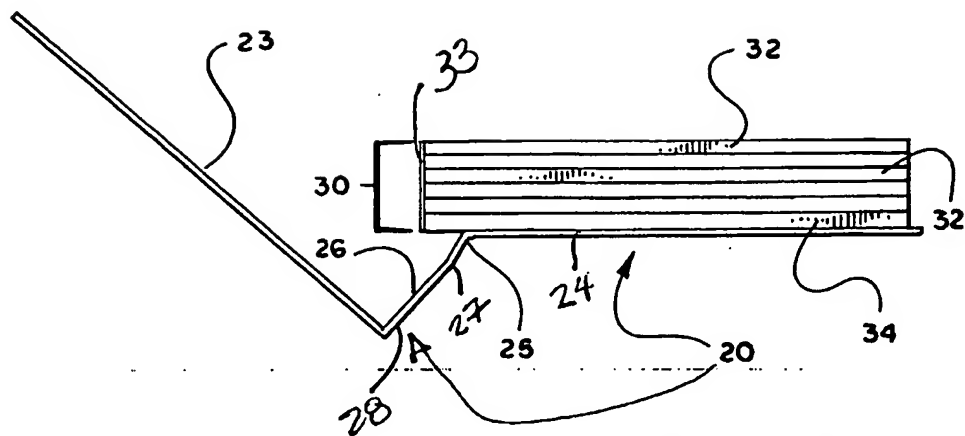


Fig. 3

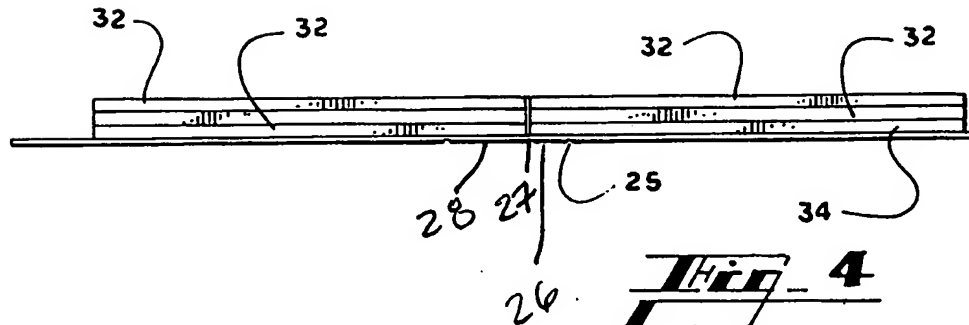


Fig. 4

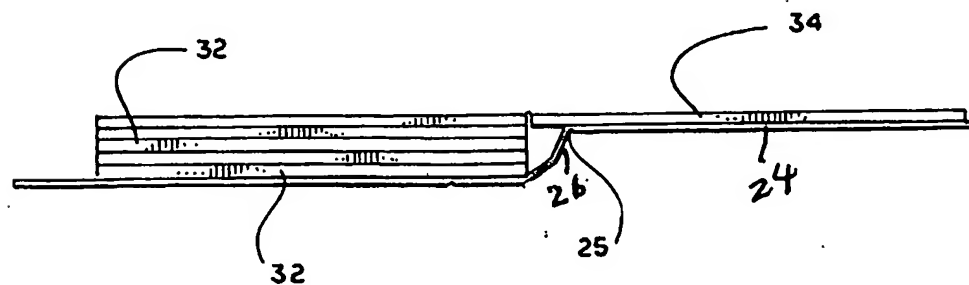


Fig. 5

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/015201

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B33/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 4 823 950 A (ROZE PAUL F) 25 April 1989 (1989-04-25) column 3, line 25 - line 34; figure 4	1,2
P,A	WO 03/050812 A (SIN KAMAN ; GELARDI JOHN A (US); GIDION PETER L (US); THIBAUT RICHARD) 19 June 2003 (2003-06-19) page 6, line 1 - page 7, line 11	1,2

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

26 October 2004

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2004/015201

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4823950	A	25-04-1989	NONE
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